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43. A method of making character strings, the method comprising:

a) providing a parental character string encoding a polynucleotide or polypeptide;

b) providing a set of oligonucleotide character strings of a pre-selected length that encode a plurality of single-stranded oligonucleotide subsequences of the parental character string or a complement thereof;

c) creating a set of derivatives of the parental character string, wherein the derivatives comprise sequence variant strings each having at least one mutation, the set comprising a plurality of mutations.

44. The method of claim 43, wherein a plurality of the single-stranded oligonucleotide sequences are overlapping in sequence.

45. The method of claim 43, further comprising applying one or more genetic operator to the parental character string, or to one or more of the oligonucleotide character strings, wherein the genetic operator is selected from:

a mutation of the parental character string or of one or more of the oligonucleotide character strings, a multiplication of the parental character string or of one or more of the oligonucleotide character strings,

a fragmentation of the parental character string or of one or more of the oligonucleotide character strings,

a crossover between any of the parental character string or one or more of the oligonucleotide character strings, or an additional character string,

a ligation of the parental character string, or one or more of the oligonucleotide character strings,

an elitism calculation,

a calculation of sequence homology or sequence similarity of an alignment comprising the parental character string or of one or more of the oligonucleotide character strings,

a recursive use of one or more genetic operator for evolution of character strings,

application of a randomness operator to the parental character string, or to one or more of the oligonucleotide character strings,

a deletion mutation of the parental character string, or one or more of the oligonucleotide character strings,

an insertion mutation into the parental character string, or into one or more of the oligonucleotide character strings,

subtraction of the parental character string, or of one or more of the oligonucleotide character strings, with an inactive sequence,

selection of the parental character string, or of one or more of the oligonucleotide character strings, with an active sequence, and

death of the parental character string, or one or more of the oligonucleotide character strings.

46. The method of claim 43, further comprising:

d) providing a set of overlapping character strings of a pre-defined length that encode both strands of the parental character string; and,

e) synthesizing sets of single-stranded oligonucleotides according to the step (c) and (d).

47. The method of claim 46, further comprising:

f) assembling a library of recombinant nucleic acids by assembly PCR from the single-stranded oligonucleotides.

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48. A library made by the method of claim 47.

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49. The method of claim 47, further comprising:

g) selecting or screening the library for one or more recombinant polynucleotide having a desired property.

50. The method of claim 48, further comprising:

h) deconvoluting the sequence of the one or more selected polynucleotide.

51. The method of claim 48, wherein the sequence of the one or more selected polynucleotide is deconvoluted by sequencing the selected polynucleotide, or by digesting the one or more selected polynucleotide.

52. The method of claim 48, wherein the sequence is deconvoluted by positional deconvolution of the one or more selected polynucleotide.

53. The method of claim 48, further comprising reiterative shuffling or selection of the library of recombinant nucleic acids.

REMARKS

The above amendments merely clarify the language of the claims and are fully supported by the specification and original claims as filed. No new matter is introduced by the amendments. Furthermore, the amendments are not made for reasons of patentability and Applicants note that the scope of the claims under the doctrine of equivalents or otherwise is not intended to be limited by the amendments.

CONCLUSION

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 510-337-7871.

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Respectfully submitted,

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